What is Claimed is:

1. A method of determining the overlay accuracy of multiple patterns formed within an arrangement of exposure fields on a semiconductor wafer, comprising:

providing a test wafer to an overlay measurement tool, the test wafer comprising the exposure fields with the patterns and a plurality of overlay targets formed with the patterns across the test wafer;

measuring first shifts of each of the overlay targets;

determining a first set of correctable and/or non-correctable overlay errors from the measured first shifts of the plurality of overlay targets;

selecting a number of overlay targets from said plurality of patterns and forming at least two different subsets thereof, wherein each subset comprises overlay targets residing in at least three of the exposure fields;

for each of the subsets performing the steps a) to c):

a) obtaining the measured first shifts, which correspond to said selected overlay targets,

b) calculate a second set of correctable and/or non-correctable errors from the measured first shifts of the selected overlay targets,

c) comparing the second set of correctable and/or non-correctable errors with the first set of correctable and/or non-correctable errors;

selecting one of the subsets in dependence of the comparison results;

providing the semiconductor wafer and measuring second shifts of those overlay targets, whose positions on the semiconductor wafer coincide with positions of the overlay targets of the selected subset on said test wafer;

assessing the quality of said semiconductor wafer based on said measured second shifts.

2. A method according to claim 1, wherein forming the subsets comprises choosing three or more overlay targets having positions on the test wafer, which are arranged substantially concentric around the center of the test wafer.

3. A method according to claim 1, further comprising:

defining a concentric area, preferably a ring or an inner circle on the test wafer, and

selecting the at least two subsets of overlay targets having positions on the test wafer, which are arranged within the concentric area.

4. A method according to claim 3, wherein

an outer ring and an inner circle are defined as concentric areas on the test wafer, and

one subset is formed each from overlay targets positioned within the inner circle or from overlay targets formed within said outer ring, and

the steps of obtaining shifts, determining the second sets of error values, comparing the first and second sets of error values and the step of selecting a subset in dependence of the comparison results are performed for each of the subsets corresponding to the overlay targets formed within the outer ring and the inner circle, separately.

5. The method according to claim 4, further comprising:

the step of combining the selected subsets, which have been selected separately from within the outer ring or from within the inner circle, into one selected subset of overlay targets.

6. The method according claim 1, wherein the first and/or second set of correctable or non-correctable error values are each one or a combination of:

a mean value,

any of the modeled errors,

residuals,

3 sigma variation or

a total range of the measured shifts.

7. A method of determining the overlay accuracy of multiple patterns, which are formed within exposure fields being arranged in a matrix on a semiconductor wafer, comprising:

providing a test wafer to an overlay measurement tool, the test wafer comprising the patterns and plurality overlay targets formed with the patterns in each of the exposure fields across the test wafer;

measuring first shifts of each of the overlay targets;

determining a first set of correctable and/or non-correctable errors from the measured first shifts of the plurality of overlay targets;

selecting each three or more exposure fields comprising overlay targets having first positions from the matrix arrangement and forming at least two subsets thereof;

for each of the subsets performing the steps a) to c):

a) obtaining the measured first shifts of the overlay targets, which are contained within the selected exposure fields of the subset,

b) determining a second set of correctable and/or non-correctable errors from the measured first shifts,

c) comparing the second set of correctable and/or non-correctable errors with the first set of correctable and/or non-correctable errors;

selecting one of the subsets of exposure fields in dependence of the comparison results;

providing the semiconductor wafer and measuring second shifts of those overlay targets, whose positions on the semiconductor wafer coincide with positions of the overlay targets of the selected subset of exposure fields on the test wafer;

assessing the quality of the semiconductor wafer based on the measured second shifts.

8. The method according to claim 7, further comprising:

following selecting a subset of exposure fields in dependence of the comparison results:

further selecting each a reduced number of overlay targets from all overlay targets, which are contained within an exposure field of thesubset and forming at least two different subsets thereof;

repeating steps a) to c) for each of the subsets having a reduced number of overlay targets;

selecting one of the subsets having a reduced number of overlay targets in dependence of the comparison results obtained in repeated step c); and

providing the semiconductor wafer and measuring the second shifts based on the selected subset having a reduced number of overlay targets.

9. The method according to claim 7, wherein

forming the subsets comprises choosing three or more exposure fields having positions on the test wafer, which are arranged substantially concentric around the center of the test wafer.

10. The method according to claim 7, further comprising

defining a concentric area, preferably a ring or an inner circle on the test wafer, and

selecting the at least two subsets of exposure fields having positions on the test wafer, which are arranged within the concentric area.

11. The method according to claim 10, wherein

an outer ring and an inner circle are defined as concentric areas on the test wafer, and

one subset is formed each from exposure fields positioned within the inner circle or from exposure fields formed within said outer ring, and

the steps of obtaining shifts, determining the second sets of error values, comparing the first and second sets of error values and selecting a subset in dependence of the comparison results are performed for each of the subsets corresponding to the exposure fields formed within the outer ring and the inner circle, separately.

12. The method according to claim 11, further comprising:

combining the selected subsets, which have been selected separately from within the outer ring or from within the inner circle, into one selected subset of exposure fields.

13. The method according to claim 7, wherein the first and/or the second set of correctable or non-correctable error values are each one or a combination of:

a mean value,

modeled errors,

residuals,

3 sigma variation or

a total range of the measured shifts.

14. The method according to claim 8, wherein the first and/or the second set of correctable or non-correctable error values are each one or a combination of:

a mean value,

modeled errors,

residuals,

3 sigma variation or

a total range of the measured shifts.

15. The method according to claim 9, wherein the first and/or the second set of correctable or non-correctable error values are each one or a combination of:

a mean value,

modeled errors,

residuals,

3 sigma variation or

a total range of the measured shifts.

16. The method according to claim 10, wherein the first and/or the second set of correctable or non-correctable error values are each one or a combination of:

a mean value,

modeled errors,

residuals,

3 sigma variation or

a total range of the measured shifts.

17. The method according to claim 11, wherein the first and/or the second set of correctable or non-correctable error values are each one or a combination of:

a mean value,

modeled errors,

residuals,

3 sigma variation or

a total range of the measured shifts.

18. The method according to claim 12, wherein the first and/or the second set of correctable or non-correctable error values are each one or a combination of:

a mean value,

modeled errors,

residuals,

3 sigma variation or

a total range of the measured shifts.